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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,191	07/31/2003	Joseph E. Foster	2166-206(16507)	2189
36527	7590	08/30/2005	EXAMINER	
ROSS CONTROLS			LE, HUYEN D	
1250 KIRTS BLVD.			ART UNIT	
PO BOX 7015			PAPER NUMBER	
TROY, MI 48007-7015			3751	

DATE MAILED: 08/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/631,191

Applicant(s)

FOSTER, JOSEPH E.

Examiner

Huyen Le

Art Unit

3751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 4-17 is/are rejected.
- 7) ☒ Claim(s) 3, 18 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4-6, 11-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Wilson (1,627,299).

The Wilson reference discloses a valve assembly comprising: a movable valve element 15 having a first face surface; a valve seat 27 having a second face surface for forming a face seal with the first face surface, wherein the first face surface includes a cavity 16 sunk into the first face surface, the cavity 16 having a peripheral bearing surface 17; an O-ring S inserted into the cavity 16 and having an outer edge contacting the peripheral bearing surface 17; and a retainer 22 secured into the cavity 16 internally of the O-ring, and having a sloped peripheral edge 23 squeezing the O-ring against the peripheral bearing surface 17, wherein the O-ring is deformed substantially to substantially fill the cavity 16 between the peripheral bearing surface 17 and the sloped peripheral edge 23, and wherein a portion 26 of the O-ring extends out of the cavity 16 above the first face surface for forming a seal between the first and second face surfaces.

Regarding claim 2, the retainer 22 has an unsloped peripheral edge portion (contacting the sidewall of recess 18) between the sloped peripheral edge 23 and the face surface.

Regarding claim 4, the movable valve element 14 comprises a piston.

Regarding claim 5, the movable valve element comprises a poppet 12.

Regarding claim 6, the cavity 16 is sunk into the first surface of the movable valve element 15.

Regarding claim 11, the valve assembly further comprises a valve stem 12 coaxially with the movable element 14 and the retainer 22, the movable valve element and the retainer being compressed together on the valve stem 12.

Regarding claim 12, the O-ring is a toroidal, wherein the peripheral bearing surface is cylindrical, and the retainer is disc-shaped.

Regarding claim 13, the O-ring is comprised of elastomeric material.

Regarding claim 15-17, the method of providing a face seal in a valve assembly is inherently performed during the normal assembly and use of the device.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. claims 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Wilson (1,627,299).

Regarding claims 7 and 10, although the Wilson reference does not specifically show that movable valve element and retainer are made of a material such as a molded resin, it would have been obvious to one of ordinary skill in the art at the time the invention was made to select a molded resin for valve and retainer ,since selecting a known material on the basis of its suitability for the intended use is a mere matter of obvious design choice. In re Leshin, 125 USPQ 416.

Regarding claim 8, the peripheral bearing surface 17 is substantially perpendicular to the first surface.

Regarding claim 9, although the Wilson reference does not specifically disclose that the sloped peripheral edge 23 is inclined from the peripheral bearing surface at angle of about 30 degrees , it would have been obvious to one having ordinary skill in the art at the time the invention was made to select a certain angle to best fit the sloped peripheral of the retainer and to optimize its performance, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ (CCPA 1980).

#### ***Allowable Subject Matter***

5. Claims 3, 18 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### ***Response to Arguments***

6. Applicant's arguments filed 06/06/2005 have been fully considered but they are not persuasive.

In regarding to applicant's arguments that Wilson fails to disclose an O-ring squeezed by a sloped peripheral edge of a retainer against the bearing surface so that the O-ring is deformed to substantially fill the cavity between the edge and the bearing surface, examiner respectfully disagrees with applicant. The sealing ring S of Wilson is elastic and compressible. Therefore, it is deformed to certain extent to substantially fill the cavity when compressed as shown in the figure.

***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huyen Le whose telephone number is 571-272-4890. The examiner can normally be reached on Monday-Friday from 9:00 am to 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Justine Yu can be reached on 571-272-4835. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HL  
August 24, 2005

  
**JUSTINE R. YU**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 3700**  
8/26/05